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April 12, 1994  
87X4660-6.10

Mr. Frank Battaglia  
USEPA Region I  
Waste Management Building  
90 Canal Street  
Boston, MA 02114

Dear Mr. Battaglia:

As we recently discussed, this letter represents an addendum to our Interim Contamination Assessment Report and Phase II Round 2 Sampling Plan dated March 1994. This addendum is intended to clarify the reasoning behind some of the conclusions drawn in that report and to modify some of the sampling strategies proposed. Each of the concerns expressed by USEPA is discussed below.

***Arsenic in Production Area Soil***

The concentration of arsenic in one sample from the Production Area exceeded the preliminary Media Protection Standard (MPS). This sample contained 125 ppm arsenic. The remaining samples contained concentrations ranging from less than 0.5 to 15 ppm, well below the MPS of 19 ppm. Because the MPS was exceeded in only one sample, and because the concentration of arsenic in that sample is substantially different from other samples in the Production Area, we are proposing to verify the result by resampling near the original location.

***Isodrin in Production Area Soil***

The concentration of isodrin in one sample from SWMU-11 in the Production Area exceeded the MPS (0.054 ppm). This sample contained 0.22 ppm isodrin. Isodrin was detected in two other samples at concentrations of 0.022 ppm (AAOI-15) and 0.01 ppm (SWMU-7). Because the MPS was exceeded in only one sample, and because the occurrence of isodrin in the Production Area is limited, we have proposed no additional sampling for isodrin in this area.

***Chlorobenzilate in Production Area and Warwick Area Soil***

Chlorobenzilate was detected in two on-site soil samples: in the Production Area (0.098 ppm) and in the Warwick Area (0.046 ppm). No MPS is available for chlorobenzilate. The concentration detected in the Production Area sample was slightly higher than the 95th

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Upper Tolerance Limit for background samples (0.0727 ppm). The fact that this analyte was detected in only two samples from the entire site, and that the detected concentrations were similar to those seen in background samples suggests that chlorobenzilate is not a compound of concern for this site. Therefore, as described in the Phase II Round 2 Sampling Plan, no additional sampling is proposed for this analyte.

***2-Nitroaniline in Production Area Soil***

Existing literature indicate that 2-nitroaniline, 3-nitroaniline, and 4-nitroaniline are "practically identical" in toxicity. 4-nitroaniline is the only one of these compounds which has a human exposure criterion (threshold limit value of 3 mg/m<sup>3</sup>). Applying a 100-fold safety factor to this exposure for extrapolation to the general population results in an exposure limit of 0.3 mg per day. Assuming a person consumes about 100 mg of soil per day, this translates to a concentration of 3,000 mg per kg of soil (3,000 ppm). The maximum concentration of 2-nitroaniline detected in Production Area soil was 4.2 ppm. Therefore, based on the calculations described above, 2-nitroaniline should not be considered an analyte of concern in the Production Area.

***Total Tetrachlorodibenzofuran in Waste Water Treatment Area Soil***

In the Phase II Round 2 Sampling Plan, total tetrachlorodibenzofuran (TCDF) concentrations in SWMU-12 soil samples were compared to the MPS for congener 2,3,7,8-TCDF (0.0023). As noted in that Plan, this was an overly conservative comparison because 2,3,7,8-TCDF is the most toxic congener. Since the Plan was written, the toxicity of TCDF congeners other than 2,3,7,8-TCDF have been evaluated, as described below.

2,3,7,8-TCDF has a toxicity equivalency factor relative to 2,3,7,8-tetrachlorodibenzodioxin of 0.1. For the other TCDFs, the toxicity equivalence factor is 0.001 (USEPA, 1989). Therefore, the preliminary MPS for the non-2,3,7,8-TCDFs is 100 times higher than that for 2,3,7,8-TCDF, due to the lower toxicity of these isomers. Therefore, the MPS for non-2,3,7,8-TCDF would be 100 times 0.0023 ppm or 0.23 ppm. Given this MPS, total TCDFs in Waste Water Treatment Area soil are not analytes of concern.

***Gamma-chlordane in Waste Water Treatment Area Soil***

The need to delineate gamma-chlordane concentrations and distribution in the Waste Water Treatment Area is currently being discussed by USEPA and Ciba-Geigy.

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***PCBs in Warwick Area Soil***

Three surface soil samples in SWMU-5 had total PCB concentrations above the MPS (31 ppm). PCB arochlor 1254 was detected in one of the subsurface soil samples at a concentration of 0.14 ppm. The remaining subsurface samples contained no detectable levels of PCBs. Therefore, as described in the Phase II Round 2 Sampling Plan, additional delineation is proposed for PCBs in SWMU-5 surface soils only.

***Bis(2-ethylhexyl)phthalate in Warwick Area Soil***

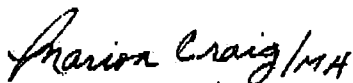
Bis(2-ethylhexyl)phthalate was detected in concentrations above the MPS (65.6 ppm) in two surface and one subsurface sample from SWMU-5. These samples contained 110, 140, and 160 ppm bis(2-ethylhexyl)phthalate. Analytical results for samples from surrounding locations indicate that this contamination has been defined. No further sampling is proposed to delineate this analyte.

In lieu of conducting additional delineation sampling at SMWU-5 (described above and in the Phase II Round 2 Sampling Plan), Ciba-Geigy may remove and dispose of contaminated soil based on existing data. Delineation would then be confirmed through the analysis of post-excavation samples.

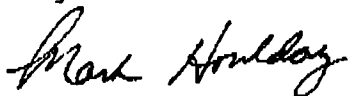
Preliminary MPSs for tri- and di- chlorodibenzodioxins and furans in all areas are being developed by Tom Marshall of PTRL. His evaluation which compares detected concentrations to MPS will be submitted under separate cover, after MPSs are available.

We believe that this addendum addresses USEPA's concerns regarding additional sampling. Should you have any comments or questions, please feel free to contact us.

Sincerely



Marion Craig, P.G.  
Project Scientist



Mark Houlday  
Project Manager

cc: Diane Leber (CG)  
Tom Marshall (PTRL)